



Project Summary

US Army Engineer
Research and Development Center
Waterways Experiment Station

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Land Loss Studies in Coastal Louisiana

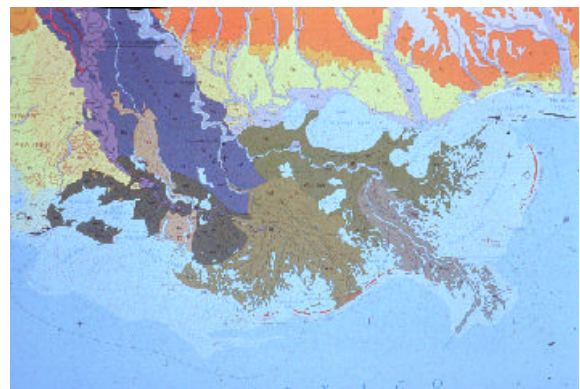
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Purpose: Site Characterization for Mitigation and Restoration Projects

The US Army Engineer Waterways Experiment Station (CEWES) and the US Army Engineer District, New Orleans (CELMN), have conducted historic land loss mapping of Louisiana's Coastal Plain since 1987. Land loss mapping was done on a 15-min (1:62,500 scale) US Geological Survey (USGS) topographic quadrangle format using historic aerial photography and aircraft multispectral imagery. Mapping is complete for 62 USGS quadrangles (an area of approximately 18,600 square miles) covering approximately a 60 year period (1930's to 1990). Land loss data generated during this study have been combined with engineering geology, depth to Pleistocene, and subsidence data in a Geographic Information System (GIS).

Land loss rates in the Louisiana Coastal Plain are decreasing from their historic high. The average land loss rate as of 1990 is 25.34 square miles per year. At its peak, estimated to have occurred in the early 1970's, the average land loss rate was 41.83 square miles per year.

Results of this study indicate that wetland loss in coastal Louisiana is highly variable. Data are being used to perform site specific investigations focusing on the causes of land loss and as an aid in making predictions of future loss. Land loss data have been combined with engineering geology, geomorphology, depth to Pleistocene, and carbon-14 age dating of marsh sediments to determine subsidence rates for site specific areas. In addition, other factors are being considered in these site specific studies to produce a complete site characterization pertaining to land loss. These studies are being used to plan future sitings of marsh creation/ preservation projects (both natural and structural). Land loss studies are also being used to model methods for minimizing marsh destruction and maximizing marsh mitigation on future man-made projects.



Louisiana coastal plain land loss mapping

Three technical reports have been published by WES as part of this study. Land loss maps such as the one shown above were published in 1996 and are in widespread use by many Federal and state agencies. For more information regarding land loss mapping in coastal Louisiana, contact [Dr. Lillian Wakeley](#) (CEERD-GG) at 601-634-3215 or [Mr. J. B. Dunbar](#) (CEERD-GG) at 601-634-3315.